

Watershed Restoration Strategies for Southern Steelhead Recovery on Gaviota Creek

April 10, 2019

SERCAL, Santa Barbara CA





Coastal Ranches Conservancy is a 501 (c)(3) nonprofit organization, whose mission is to support nature conservation, restoration, and education on the Gaviota Coast.



The focus of Coastal Ranches Conservancy is exclusively on the Gaviota Coast, working with landowners, public agencies, other nonprofit organizations.



Conservation



Restoration



Education



The Gaviota Coast represents 50% of the remaining rural coastline in Southern California. This is where we work and live and our connections to the land and the people are strong.



Location Map: Friends of Channel Coast State Parks and Gaviota Coast Conservancy



Our **conservation programs** are aimed at two areas:

1. Conservation easements.
 2. Providing management tools and support to enable sustainable land management.
- Some 75% of the Gaviota Creek Watershed is already either in public lands or protected by conservation easements. Our goal is to protect as much of the rest as possible by working closely with interested land owners.
 - We collaborate with the California Rangeland Trust and the Land Trust for Santa Barbara County in working with land owners who wish to place a conservation easement on their property.





We believe **education program** is an important element of an overall conservation strategy.

- By giving kids a chance to experience the natural wonders of the Gaviota Coast, we hope to pass on an appreciation of the region, and develop our next generation of environmental stewards.
- We are doing our part in helping close the much talked about “nature deficit” in today’s youth.
- We collaborate with Central Coast Salmon Enhancement, Hollister Ranch Conservancy and UCSB’s Cheadle Center for Biodiversity to implement Trout in the Classroom, Tide Pool School, and Kids in Nature programs respectively.





We have a number of **habitat restoration programs** that we work on; both large and small.

- Collaboration with all of the stakeholders, including the Federal, State, and local agencies, non-profits, and private property owners is key to success.
- We fund a wide variety of projects that restore natural habitat, ranging from installation of site specific off-stream cattle watering troughs and removal of non-native invasive plants to restoration of the entire Gaviota Creek watershed.
- We collaborate with South Coast Habitat Restoration and Channel Islands Restoration on steelhead and estuary restoration elements.





- 100 years ago, Southern California was famous for its steelhead runs
- Santa Ynez River - ~ 11,000 adult fish
- Santa Clara River - ~ 9,000 adult fish
- Ventura River - ~ 5,000 adult fish
- Steelhead fishing in the region was enormously popular with men, women and children
- **Annual steelhead runs in Southern California have declined precipitously from 32,000-46,000 returning adults to less than ~500.**





- **Level of Concern: CRITICAL**

Southern steelhead populations are in danger of extinction within the next 25-50 years due to anthropogenic and environmental impacts threatening their recovery. Since its listing in 1997, abundance has continued to decline to precariously low levels.

- **Top 3 Threats:** Major Dams, Urbanization, Estuary Alteration.

- **Actions:** Water Conservation, Manage both resident Rainbow Trout with Southern steelhead as part of DPS, Fish Passage Remediation, CMP, Non-native species removal, Estuary Enhancement



Science-based report released:
45% of California's salmon, steelhead,
and trout will be extinct within 50 years.

We have an opportunity to reverse this trajectory - the good news is that 31 of our 32 salmonids still persist, but we must act now. CalTrout's projects are leading the way and with your help we can return our native fish to resilience.

Which fish species
are in hot water?

What is threatening
their survival?

What's being done?
How can you help?

Click to explore the online version of CalTrout's beautifully illustrated 95-page report.



Restoring Gaviota Creek Watershed is our most ambitious Restoration Project yet!

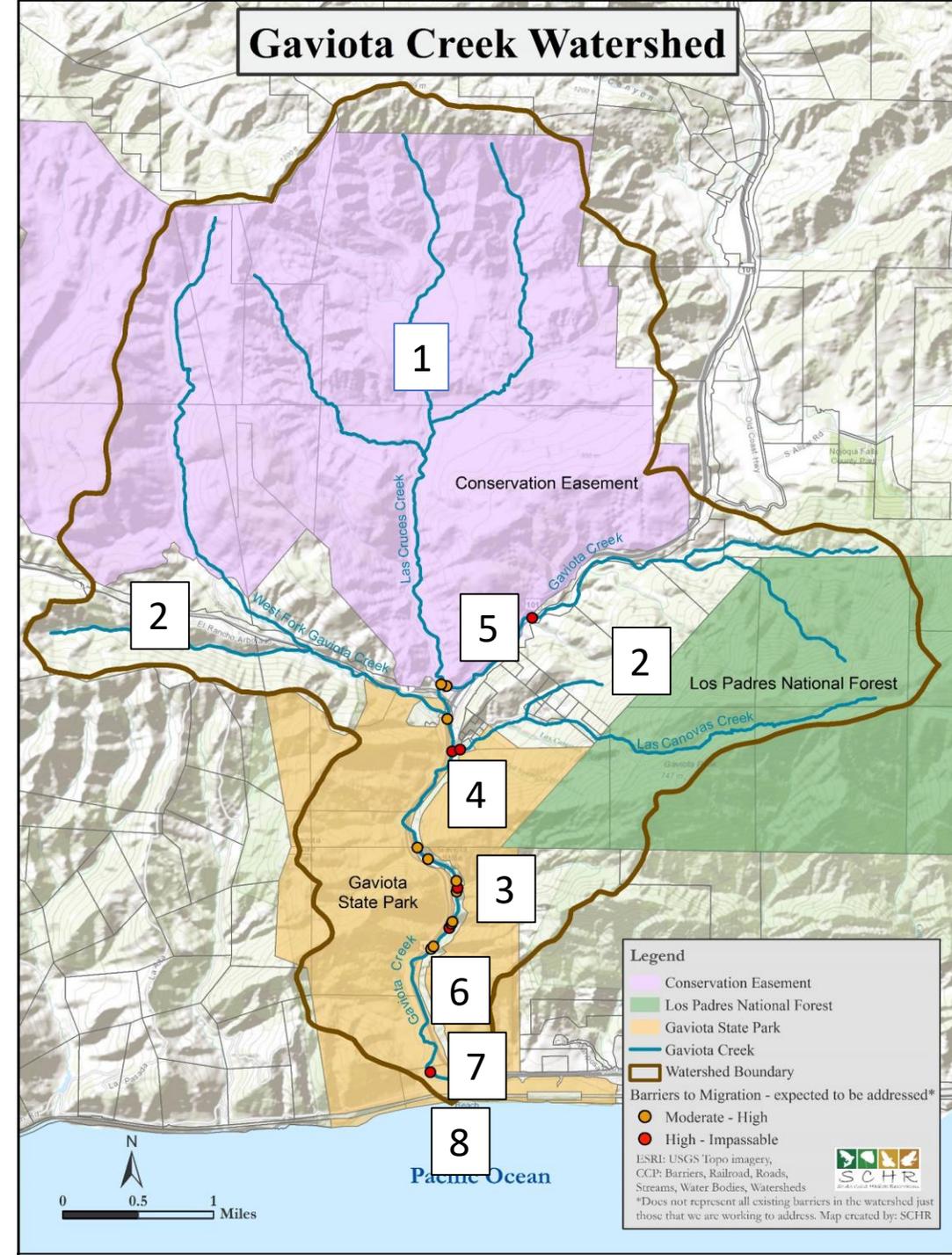
The Gaviota Creek Watershed Restoration Program consists of the following elements:

- Protect remaining private lands from development by purchasing conservation easements from willing sellers
- Restore healthy population of Southern Steelhead by removing fish passage barriers
- Restore the flood plain and natural sediment flow by relocating the Gaviota State Park access road and constructing a new access road to Gaviota State Park
- Relocate the campground and re-design the beach day-use parking area to enhance Gaviota Creek estuary by removing fill to enlarge the wetland area and restoring native vegetation.
- Relocate the roadside rest areas to improve traffic safety and return to Gaviota Creek water used by the rest areas to increase its stream flow.



Gaviota Creek Watershed Restoration Project Elements:

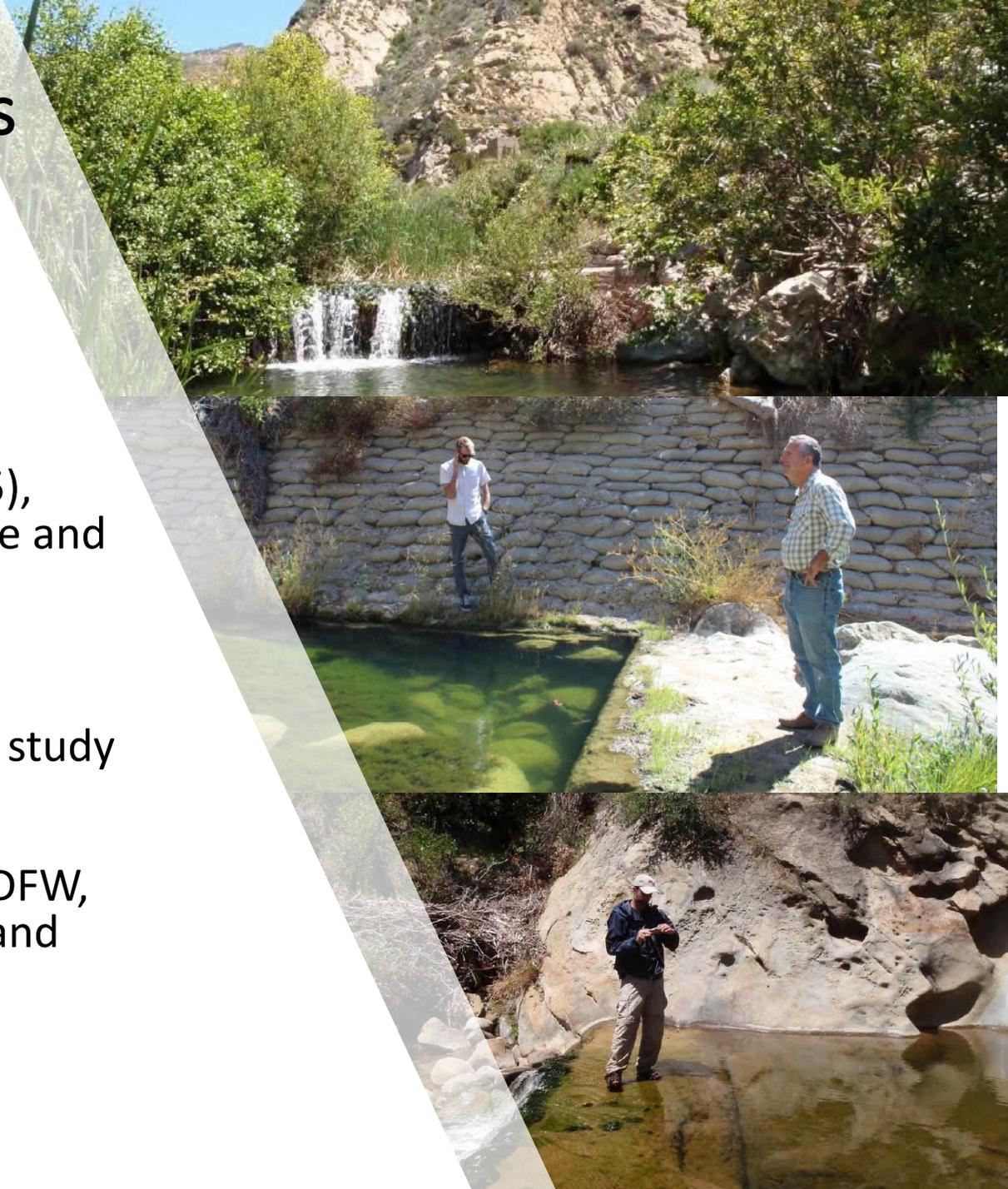
1. Private lands with existing conservation easements
2. Private lands where conservation easements are sought
3. Fish Passage Barrier Removal Phase One – Lowest five barriers in the watershed
4. Fish Passage Barrier Removal Phase Two – 7 barriers above Phase One barriers
5. Fish Passage Barrier Removal Phase Three – Two culverts under Highway 101
6. Re-locate Park access road
7. Restore natural sediment flow to floodplain
8. Expand and restore the estuary

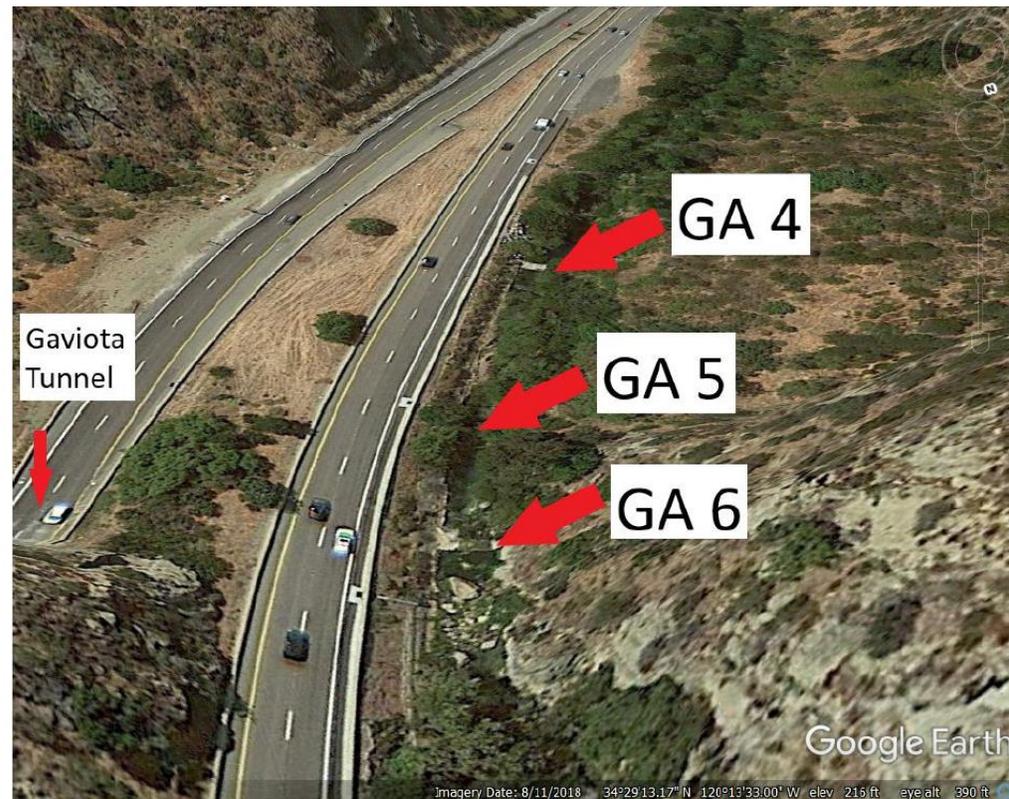
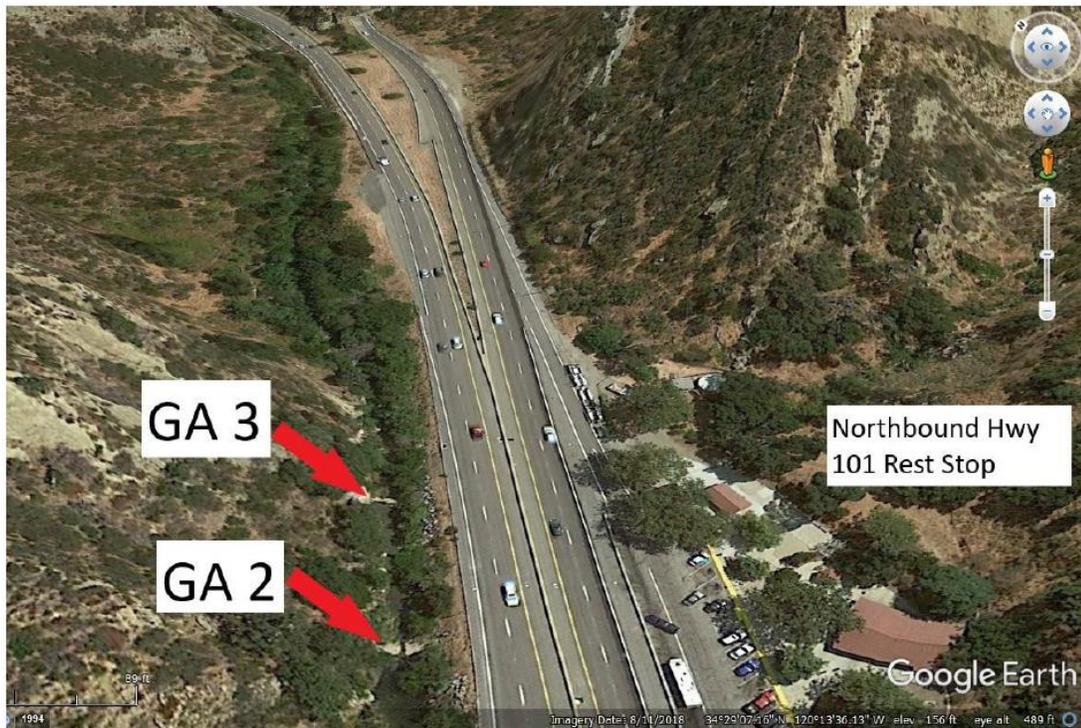


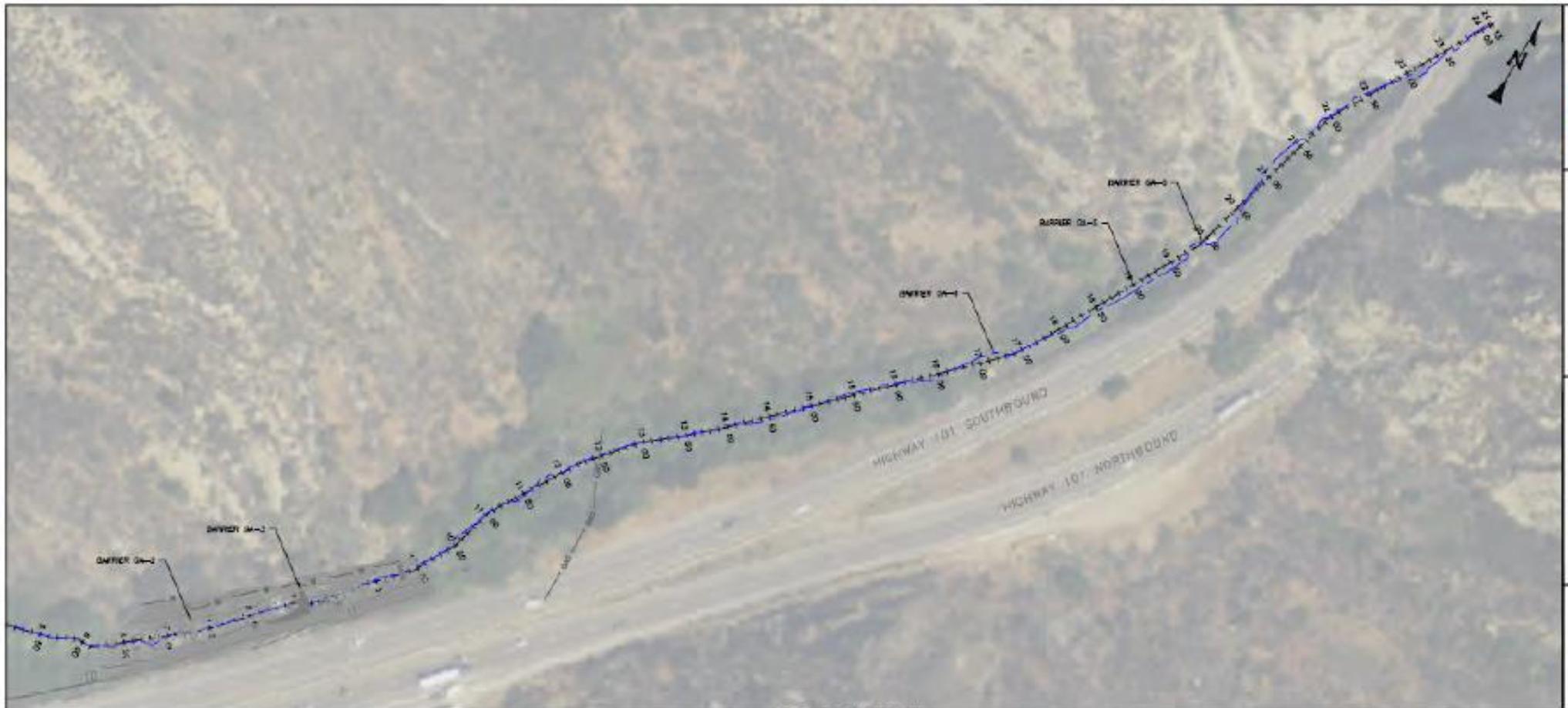


Lower Fish Passage Barriers Alternatives Analysis

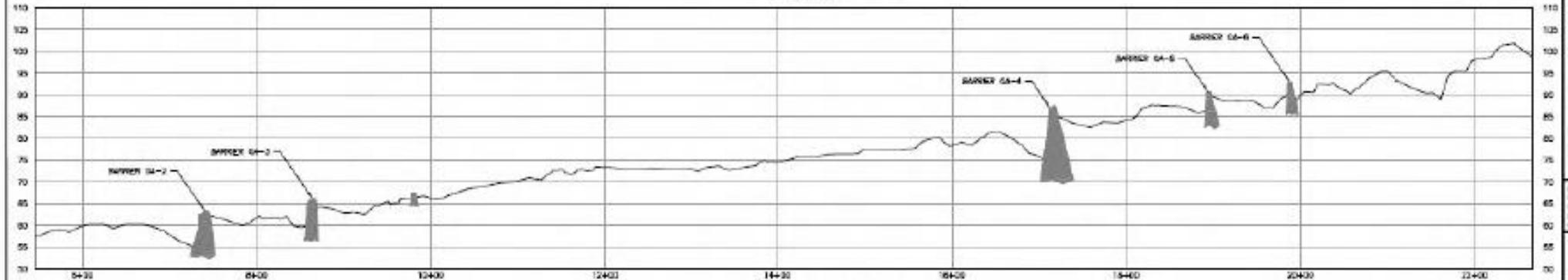
- The construction of Highway 101 resulted in 17 fish passage barriers along Gaviota Creek.
- The Gaviota Creek Watershed Restoration Plan (2015), NOAA Recovery Plan (2012), Gaviota Creek Fish Passage and Geomorphic Assessment (2007) all call for fish passage remediation.
- SCHR is currently completing an alternatives analysis study for the lower five fish passage barriers that have been identified as priority barriers by the Central Coast Fish Passage Advisory Committee (convened by Caltrans, CDFW, and NOAA), with support from Waterways Consulting and Jacobs Engineering.
- Slated for completion fall 2019.







PROJECT OVERVIEW
SCALE = 1" = 50'



CHANNEL PROFILE
SCALE = 1" = 50'



Road Realignment

1

The access road to Gaviota Beach State Park acts as a barrier **cutting across the entire middle floodplain** of Gaviota Creek, concentrating streamflow and the materials it carries during a flood rather than allowing it to spread across the floodplain.

2

The **bridge** along the access road near the Park entrance is **undersized**.

3

The access road also resulted in **sediment accumulating upstream** of the road crossing, forming an impoundment and fish passage barrier, preventing sediment from getting flushed out to sea, where it can replenish beaches.

4

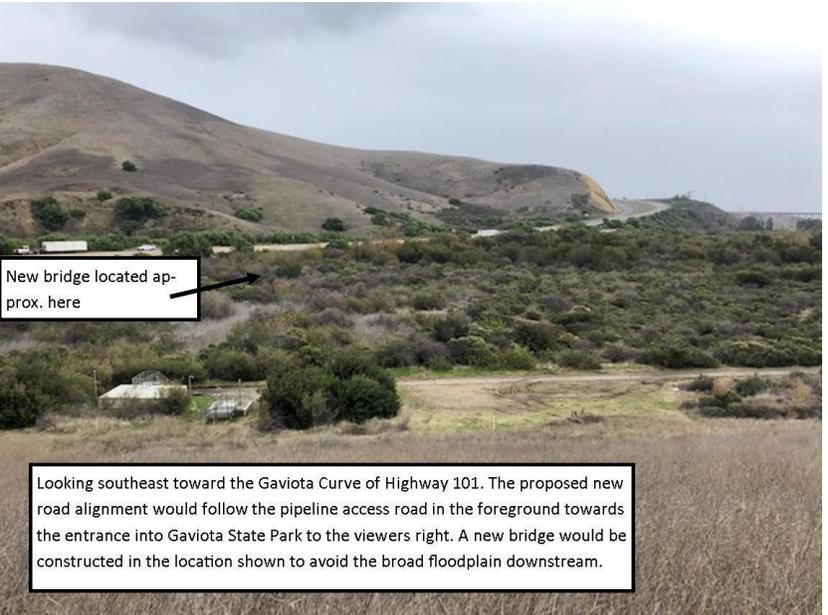
Maintenance actions place cleared sediment on either side of the road, further exacerbating the problem. This causes flood waters to be concentrated and pushed into the Park instead of being spread out above the estuary.

5

This **long-standing problem** is a restoration priority for Southern steelhead fish passage, but also Park visitors, campers, and the Hollister Ranch residents, as flooding can deposit mud and debris throughout the Park campground and interrupt access for many days at a time.

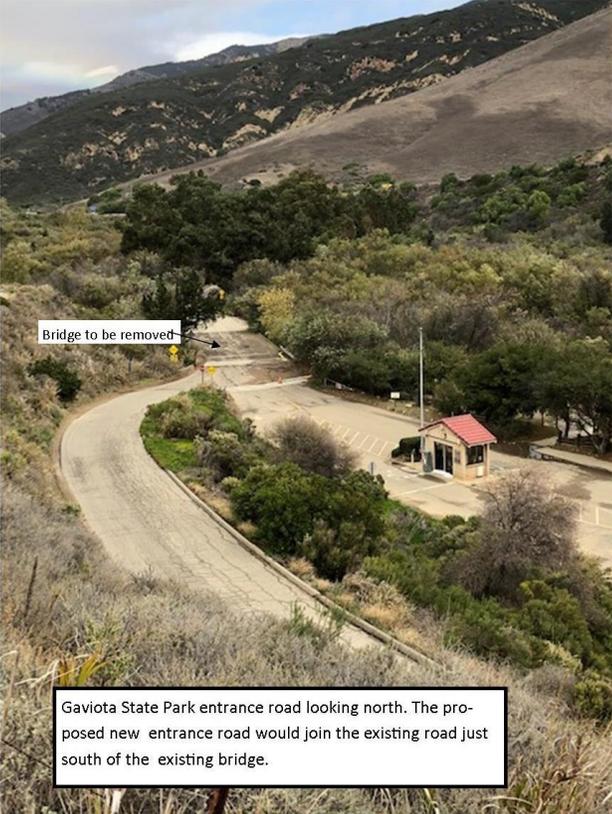
In 2010 Caltrans, at the request of State Parks, prepared two alternative design studies for a new access road which would move the road entirely out of the floodplain and route the access across a 80 ft bridge approximately 2300 ft upstream from the current bridge location and then down the west side of the creek.

We have a pending CDFW Prop 1/68 grant pending to complete 30% design that will look at ways to restore passage, sediment transport, floodplain ecological processes, and support longer term watershed goals of enhancing the estuary, which is 25 % of its original extent.



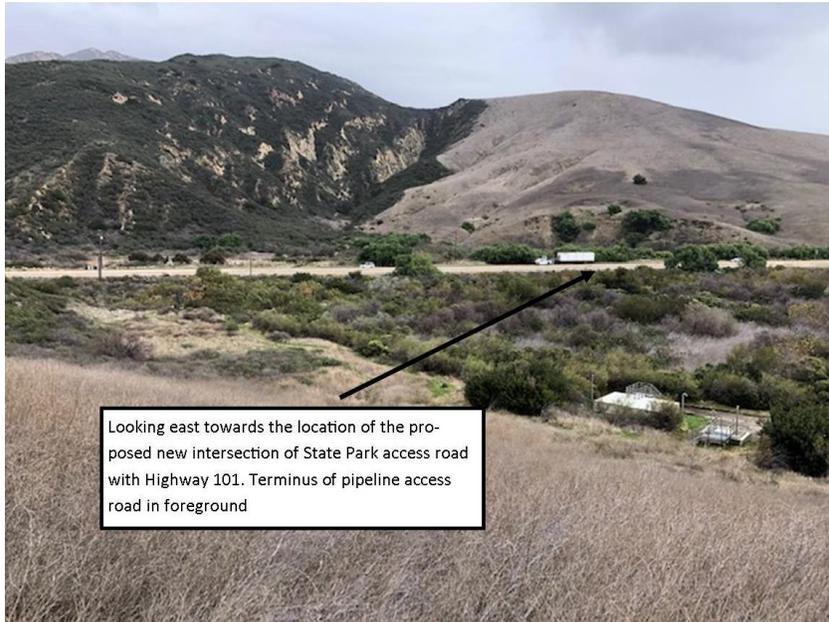
New bridge located approx. here

Looking southeast toward the Gaviota Curve of Highway 101. The proposed new road alignment would follow the pipeline access road in the foreground towards the entrance into Gaviota State Park to the viewers right. A new bridge would be constructed in the location shown to avoid the broad floodplain downstream.



Bridge to be removed

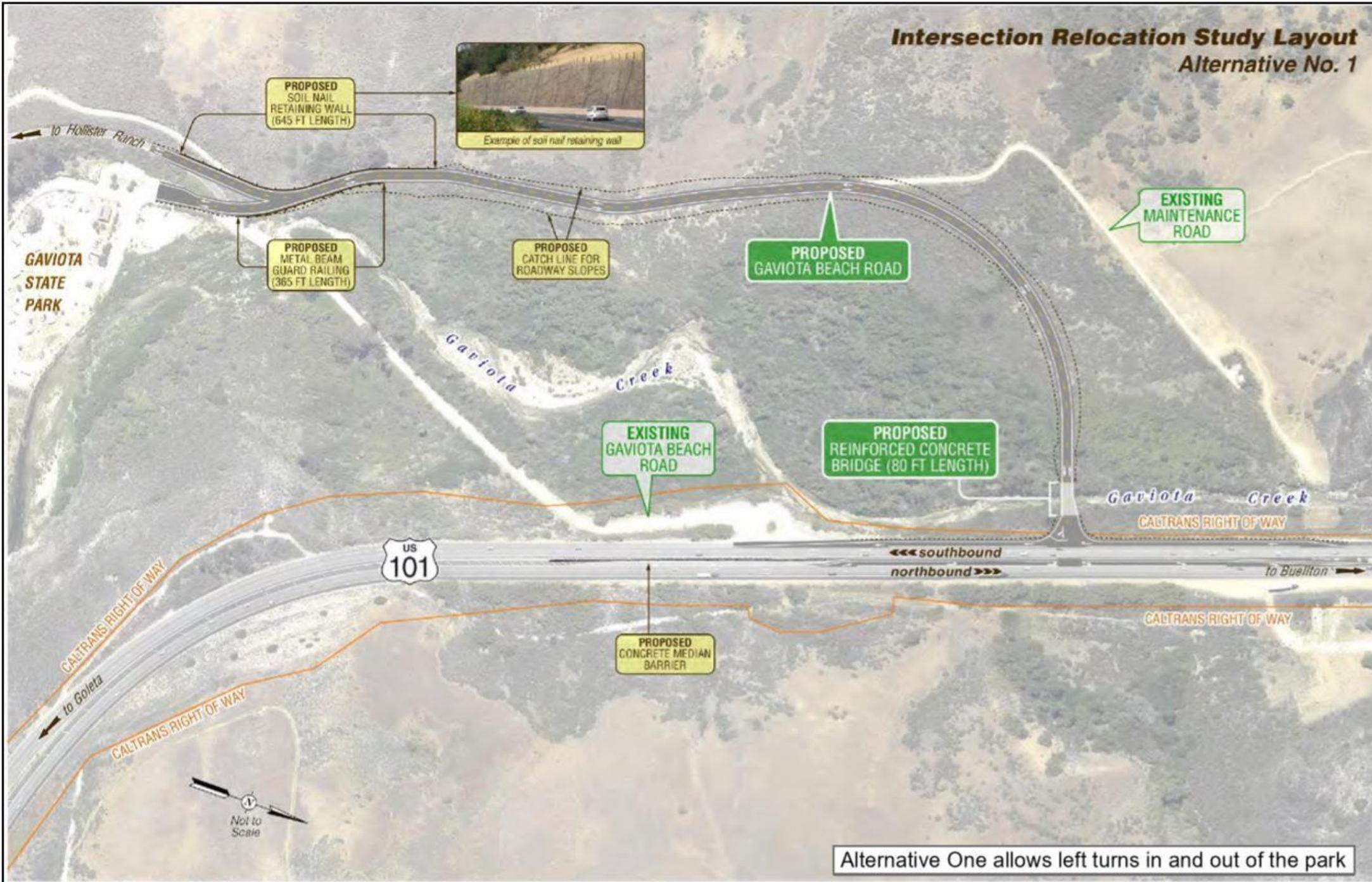
Gaviota State Park entrance road looking north. The proposed new entrance road would join the existing road just south of the existing bridge.



Looking east towards the location of the proposed new intersection of State Park access road with Highway 101. Terminus of pipeline access road in foreground



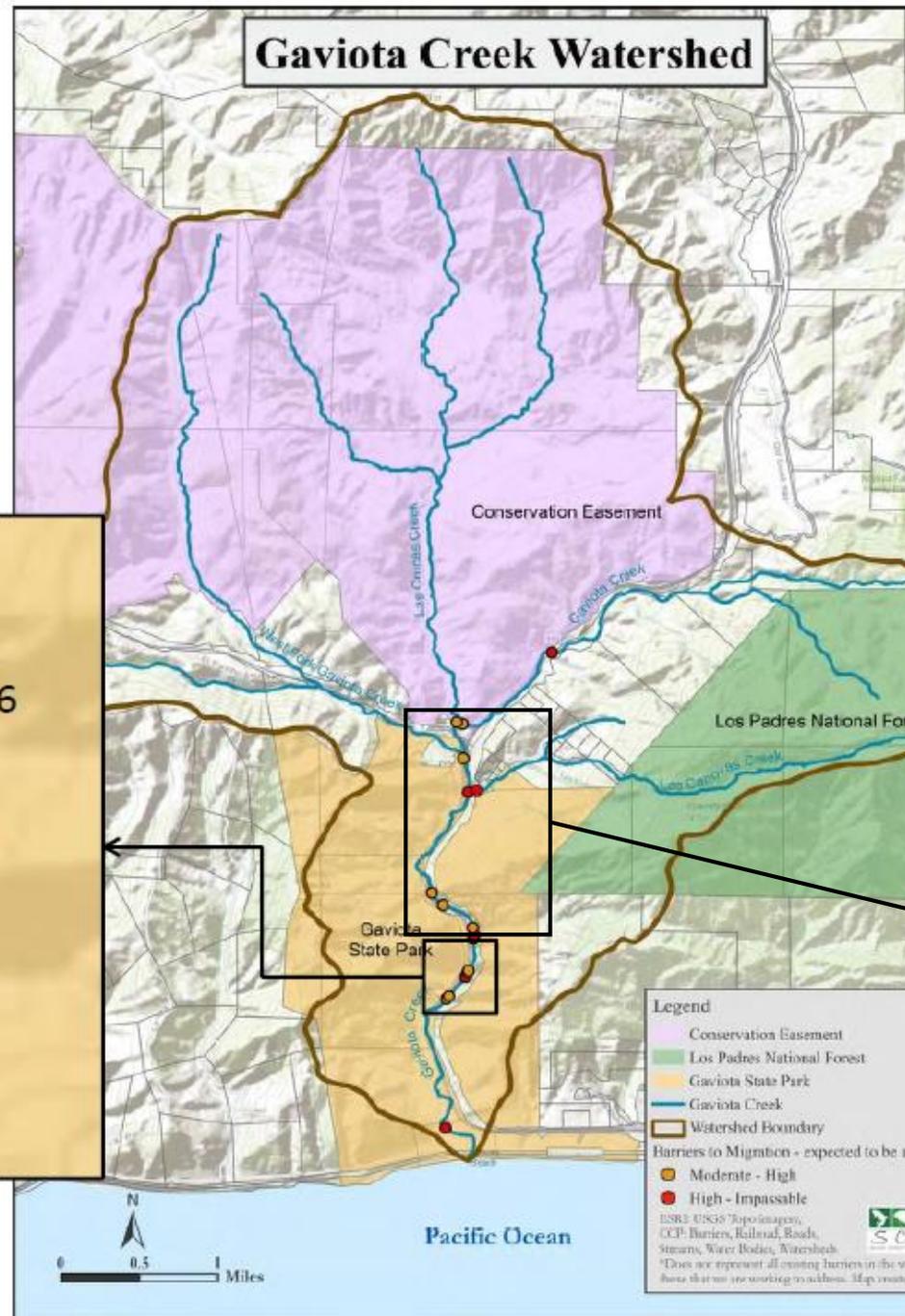
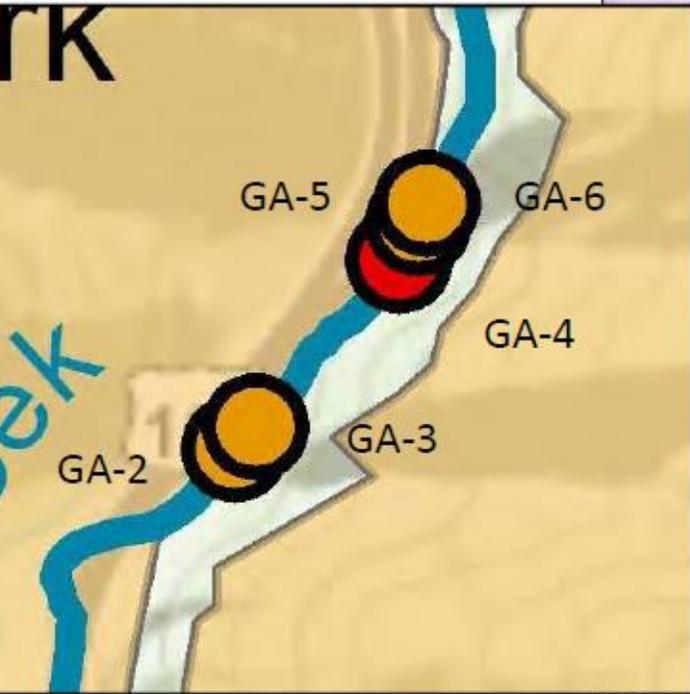
Intersection Relocation Study Layout Alternative No. 1



Alternative One allows left turns in and out of the park



Phase I Underway



Phase II Fish Passage Barriers Alternatives Analysis

Phase II Submission slated for April 30, 2019



Estuary Enhancement

Channel Islands Restoration completed the Restoration Potential of Gaviota Creek Estuary and Environs was completed in 2017.

The Gaviota Creek estuary was originally 11 acres in size; today it is only 2 acres

Short-term, it is possible to increase the size of the estuary to 5 acres without re-configuring the parking or campground areas.

Long-term plans by the State Park to relocate the campground would open up an opportunity to increase the size of the estuary to about 10 or more acres, close to its original size.

Expansion of the estuary should have a beneficial impact on the Southern Steelhead population in the creek and is called for in the federal recovery plan for this species.

A restored estuary will likely increase shorebird populations and diversity, improve recreational fishing, and benefit the Kashtayit Marine Conservation Area, just offshore



Figure 7. Potential Restoration Areas

Source: NOAA UTM Zone 11N
Map produced by Jason Whittle 2017
Service Layer Credits: Source: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, RD, NPS, NRCAN, Esri, Swisstopo, IGN, Kadaster/NL, Ordnance Survey, Esri, Swisstopo, Esri, China (Hong Kong), Swisstopo, Mapbox, © OpenStreetMap contributors, and the GIS User Community





Stakeholder Engagement and Partners

We're bringing together natural resource agencies, nonprofits, landowners and residents of the watershed together on a quarterly basis to build consensus based coalition support.

State Coastal Conservancy • South Coast Habitat Restoration • California Department of Parks and Recreation • Hollister Ranch Owners Association • California Department of Transportation • Los Padres National Forest • California Rangeland Trust • Land Trust for Santa Barbara County • Gaviota Coast Conservancy • Vista de las Cruces Elementary School • Santa Barbara Channelkeepers • County of Santa Barbara • California Department of Fish and Wildlife • CalTrout • NOAA Fisheries • Central Coast Regional Water Quality Control Board • Cachuma Resource Conservation District





Outreach and Messaging

Website: www.coastalranchesconservancy.org/gaviota-creek-watershed/

Vimeo: <https://vimeo.com/274188886>

Facebook: Coastal Ranches Conservancy



The Gaviota Creek Watershed Restoration Project - 2015 to Present

Restoring the Gaviota Creek watershed is our biggest project and will take many years to achieve its full potential. This watershed is uniquely suited for restoration as it is the largest on the Gaviota Coast and much of it is already protected by public ownership and conservation easements on private ranch lands. Because it has water flowing in it even during extreme drought, Gaviota Creek is an important refuge for rare species such as the Southern Steelhead, native Pond Turtle, Red-Legged Frog, and many others. It serves as an important wildlife corridor for larger game species as well.



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Coastal Ranches Conservancy



Southern California Steelhead